What is claimed is:

1. A method for increasing the adsorption capacity of a doped inorganic adsorbent material for adsorbing one or more solute species from a gas-phase or from a liquid-phase, said doped inorganic adsorbent material being doped with one or more suitable dopants, said method comprising at least one step selected from:
selecting the type of dopant or dopants, wherein said selection includes both compounds selected from the group consisting of: compounds that are the same and different from one or more selected solute species, compounds that are are derivatives of one or more selected solute species, compounds that belong to the same chemical class as one or more selected solute species, compounds having similar functionalities as one or more selected solute species and combinations thereof;
selecting an increased concentration of said dopant or dopants;
selecting the molecular dimension of said dopant or dopants;
tailoring a pore structure of said doped inorganic adsorbent material through the doping of said material and
combinations thereof.

2. The method according to claim 1, wherein said doped inorganic adsorbent material comprises an adsorption capacity towards at least one of said selected solute species which is at least about 8 mg/g greater than the adsorption capacity of a corresponding undoped inorganic adsorbent reference material, wherein said adsorption capacity is measured in accordance with an Adsorption Capacity Test Method.

3. The method according to claim 1, wherein said doped inorganic adsorbent material comprises an adsorption capacity towards at least one of said selected solute species which is at least about 30% greater than the adsorption capacity of a corresponding undoped inorganic adsorbent reference material, wherein said adsorption capacity is measured in accordance with a Adsorption Capacity Test Method.

4. A doped inorganic adsorbent material for adsorbing one or more selected solute species from a gas-phase or from a liquid-phase, said doped inorganic adsorbent material being

doped with one or more suitable dopants, wherein at least one of said dopants comprises a concentration of more than about 1,000 ppm.

5. The doped inorganic adsorbent material according to claim 4, wherein at least one of said dopants comprises a largest molecular dimension of at least about 0.5 nm, wherein said molecular dimension is evaluated at the synthesis conditions of said doped inorganic adsorbent material.

6. The doped inorganic adsorbent material according to claim 4, wherein said doped inorganic adsorbent material comprises a material selected from the group consisting of silica; alumina; silicates; natural and synthetic aluminosilicates; silica gel and combinations thereof.

7. The doped inorganic adsorbent material according to claim 6, wherein said doped inorganic adsorbent material comprises active silica.

8. A doped inorganic adsorbent material for adsorbing one or more selected solute species from a gas-phase or from a liquid-phase, said doped inorganic adsorbent material being doped with one or more suitable dopants, wherein at least one of said dopants has a largest molecular dimension of at least about 0.5 nm, wherein said molecular dimension evaluated at the synthesis conditions of said doped inorganic adsorbent material.

9. The doped inorganic adsorbent material according to claim 8, wherein said doped inorganic adsorbent material comprises a material selected from the group consisting of: silica; alumina; silicates; natural and synthetic aluminosilicates; silica gel and combinations thereof.

10. The doped inorganic adsorbent material according to claim 9, wherein said doped inorganic adsorbent material comprises active silica.

11. A doped inorganic adsorbent material for adsorbing one or more selected solute species from a gas-phase or from a liquid-phase, said doped inorganic adsorbent material being doped with one or more suitable dopants, wherein at least one of said dopants is selected from metals in finely divided form.

12. The doped inorganic absorbent material according to claim 11, wherein said metals in finely divided form are colloidal metals.

13. The doped inorganic adsorbent material according to claim 12, wherein said metal in finely divided form is a colloidal metal selected from the group consisting of colloidal gold, silver, copper, platinum and platinum group metals, zinc, cadmium, mercury, lead, arsenic, antimony, manganese and combinations thereof.

14. A doped inorganic adsorbent material according to claim 13, wherein said colloidal metal is colloidal gold or colloidal silver.

15. The doped inorganic adsorbent material according to claim 11, wherein said metal in finely divided form comprises a concentration of from about 10 to about 1,000 ppm.

16. The doped inorganic adsorbent material according to claim 11, wherein said doped inorganic adsorbent material comprises a material selected from the group consisting of: silica; alumina; silicates; natural and synthetic aluminosilicates; silica gel and combinations thereof.

17. The doped inorganic adsorbent material according to claim 16, wherein said doped inorganic adsorbent material comprises active silica.

18. A doped inorganic adsorbent material for adsorbing one or more selected solute species from a gas-phase or from a liquid-phase, said doped inorganic adsorbent material being doped with one or more suitable dopants, wherein at least one of said dopants is selected from organo-metallic compounds or complexes.

19. The doped inorganic adsorbent material according to claim 18, wherein said organo-metallic compound or complex is selected from Cu-phthalocyanines, metallocene compounds and combinations thereof.

20. The doped inorganic adsorbent material according to claim 18, wherein a metal moiety in said organo-metallic compounds or complexes comprises a concentration of from about 10 to about 1,000 ppm.

21. The doped inorganic adsorbent material according to claim 18, wherein an organic moiety of said organo-metallic compounds or complexes comprises a concentration of greater than about 1,000 ppm.

22. The doped inorganic adsorbent material according to claim 18, wherein said doped inorganic adsorbent material comprises a material selected from the group consisting of: silica; alumina; silicates; natural and synthetic aluminosilicates; silica gel and combinations thereof.

23. The doped inorganic adsorbent material according to claim 22, wherein said doped inorganic adsorbent material comprises active silica.

24. A doped inorganic adsorbent material for adsorbing one or more selected solute species from a gas-phase or from a liquid-phase, said doped inorganic adsorbent material being doped with one or more suitable dopants, wherein at least one of said dopants, is selected from precipitation salts of a weak acid and of a strong base.

25. The doped inorganic adsorbent material according to claim 25, wherein said precipitation salt has a concentration of from about 1% to about 50% by weight.

26. The doped inorganic adsorbent material according to claim 25, wherein said doped inorganic adsorbent material comprises a material selected from the group consisting of silica; alumina; silicates; natural and synthetic aluminosilicates; silica gel and combinations thereof.

27. A doped inorganic adsorbent material according to claim 26, wherein said doped inorganic adsorbent material comprises active silica.

28. A doped inorganic adsorbent material for adsorbing one or more selected solute species from a gas-phase or from a liquid-phase, said doped inorganic adsorbent material being

doped with one or more suitable dopants, wherein at least one of said dopants, is selected from precipitation salts of a strong acid and of a weak base.

29. The doped inorganic adsorbent material according to claim 28, wherein said precipitation salt comprises a concentration of from about 1% to about 50% by weight.

30. The doped inorganic adsorbent material according to claim 28, wherein said doped inorganic adsorbent material comprises a material selected from the group consisting of silica; alumina; silicates; natural and synthetic aluminosilicates; silica gel and combinations thereof.

31. The doped inorganic adsorbent material according to claim 30, wherein said doped inorganic adsorbent material comprises active silica.

32. A doped inorganic adsorbent material for adsorbing one or more selected solute species from a gas-phase or from a liquid-phase, said doped inorganic adsorbent material being doped with at least two dopants, said dopants being selected from the group consisting of: metals in finely divided form, precipitation salts of a weak acid and of a strong base and combinations thereof.

33. The doped inorganic adsorbent material according to claim 32, wherein said doped inorganic adsorbent material comprises a material selected from the group consisting of: silica; alumina; silicates; natural and synthetic aluminosilicates; silica gel and combinations thereof.

34. The doped inorganic adsorbent material according to claim 33, wherein said doped inorganic adsorbent material comprises active silica.

35. A doped inorganic adsorbent material for adsorbing one or more selected solute species from a gas-phase or from a liquid-phase, said doped inorganic adsorbent material being doped with at least two dopants, said dopants being selected from the group consisting of metals in finely divided form, precipitation salts of a strong acid and of a weak base and combinations thereof.

36. The doped inorganic adsorbent material according to claim 35, wherein said doped inorganic adsorbent material comprises a material selected from the group consisting of silica; alumina; silicates; natural and synthetic aluminosilicates; silica gel and combinations thereof.

37. The doped inorganic adsorbent material according to claim 36, wherein said doped inorganic adsorbent material comprises active silica.

38. A method for manufacturing a doped inorganic adsorbent material for adsorbing one or more selected solute species from a gas-phase or from a liquid-phase, said doped inorganic adsorbent material being doped with one or more suitable dopants, said doped inorganic adsorbent material comprising one or more pores with a predetermined selected pore size, said method comprising the steps of:

- synthesizing said doped inorganic adsorbent material at specific synthesis conditions in the presence of a suitable dopant or dopants, said dopant or dopants having a molecular dimension at said synthesis conditions that is similar to said predetermined selected pore size in said doped inorganic adsorbent material and

- at least partially removing said dopant or dopants from said doped inorganic adsorbent material.

39. The method according to claim 38, wherein at least one of said dopants comprises a concentration of more than about15,000 ppm.